by the washing machine interrupt switch is allowed to rise to the point where the interrupt switch returns power to the washing machine.

5. Assume a community with local power generation. This community has 5 fuel cells, each supporting 100 homes for a total community of 500 homes. Assume that the power from any or all of the 5 fuel cells can be shared by, or distributed as needed to any or all of the 500 homes. With all 5 fuel cells running, there is enough power to meet the community's peak power demand. If one or more of the fuel cells is disabled, the 500 homes need to conserve power usage as they are now being powered by the remaining 4 or less fuel cells. With all 5 fuel cells operating and on-line the power capability is given a rating of 5. With one fuel cell disabled, the power capability rating is 4, with two fuel cells disabled the power capability rating is 3, etc. The homes in this community are all equipped with generator monitors on the power lines supplying their homes. If one or more fuel cells become disabled, the associated power capability rating is transmitted to all the generator monitors in the communities. The capability ratings cause the generator monitors to be set with reference outputs that reflect the homes share of the current generating capacity. The generator monitors 20 in the homes can then use the reference outputs to calculate GAP levels and transmit them to the other devices in the home. In this example, a system of the present invention is used to manage electricity usage in a reduced utility power condition as opposed to the reduced power coming from a home's individual generator.

I claim:

1. An electric power monitoring system comprising:

a source monitor for measuring momentary power output of an electric source supplying electric power to a power distribution system having at least one electric load;

means for comparing the momentary power output with a reference load capability for the electric source to determine the ability of the electric source to

support additional load, and for transmitting load capability data based on the load capability; and

at least one load control for receiving the transmitted load capability data and controlling the supply of power to the at least one corresponding electric load based on the load capability data.

2 The electric power monitoring system of claim 1 wherein the reference load capability is determined based on at least one of a reference surge load and a reference continuous load.

3 The electric power monitoring system of claim 2 wherein the reference surge load or reference continuous load are programmable according to time of day.

4 The electric power monitoring system of claim 1 wherein the source monitor comprises multiple source monitors, and wherein the means for comparing compares the momentary power output with multiple reference load capabilities, and transmits multiple load capability data to respective multiple loads according to unique load identifiers.

5 The electric power monitoring system of claim 1 wherein the reference load is adjusted in accordance with electric source drive capability, electric source efficiency, or predetermined load patterns, during a power source initialization.

6 The electric power monitoring system of claim 1 wherein the at least one load control comprises an interrupt switch for interrupting the supply of power to the electric load when the transmitted load capability is less than a predetermined level.

7 The electric power monitoring system of claim 6 wherein the interrupt switch interrupts the supply of power for an interrupt time period upon the return of power following a power failure condition.

8 The electric power monitoring system of claim 7 wherein the interrupt time period is set to delays the return of power for a period of time for the purpose of reducing the total sudden load on the main power source at initial power return.

9 The electric power monitoring system of claim 6 wherein the interrupt switch further monitors electric power levels drawn by the at least one electric load and interrupts the supply of power to the electric load when the transmitted load capability is less than the monitored power levels of the at least one electric load.

10 The electric power monitoring system of claim 6 wherein the interrupt switch delays interruption of the supply of power until the electric load has completed an operation cycle.

11 The electric power monitoring system of claim 6 wherein the interrupt switch delays interruption of the supply of power until the electric load has completed an operation cycle if the electric load's continuous load level is substantially equal to a predetermined level of normal operation.

12 The electric power monitoring system of claim 6 wherein the interrupt switch further comprises a signal transmission system that transmits interrupt switch identifier data and interrupt switch status data.

13 The electric power monitoring system of claim 12 wherein a switch open status is transmitted when the switch is open and wherein a switch closed status is transmitted just prior to closing the switch for transmitting status data when the corresponding electric load is without power and thereby unable to emit any electromagnetic interference that would compromise the interrupt switch status transmission.

14 The electric power monitoring system of claim 1 further comprising a user interface indicating a condition of whether the electric source has sufficient load capability for supplying electrical power to the at least one electric load.

15 The electric power monitoring system of claim 14 wherein the user interface receives and displays data from the at least one load control related to the electric load level.

16 The electric power monitoring system of claim 14 wherein the user interface interprets a first difference in surge load capability in excess of the continuous load capability and compares this difference to a second difference between a start up surge and continuous load of electric load and determines a power level reported to the user on the interface.

17 The electric power monitoring system of claim 12 further comprising a user interface for reporting the interrupt switch status data to a user.

18 The electric power monitoring system of claim 17 wherein the user interface measures the time period an interrupt switch is open and reports data related the time period to a user.

19 The electric power monitoring system of claim 17 wherein the electric source is a fuel-based generator, wherein the source monitor measures fuel level in a fuel tank for the generator, and wherein fuel data based on the fuel level is provided on the user interface.

20 The electric power monitoring system of claim 19 wherein the user interface measures total electric power consumed by the power distribution system, measures the fuel consumed for generating the power, and presents a cost per energy unit for comparison with current or available utility rates.